

ABSTRACT

[0078] A method for creating a microarray of biomaterial uses a source of laser energy, a receiving substrate, and a target substrate. The target substrate comprises a laser-transparent support having a laser-facing surface and a support surface. The target substrate also comprises a composite material having a back surface in contact with the support surface and a front surface. The composite material comprises a mixture of the biomaterial to be deposited and a matrix material. The matrix material is a material that has the property that, when it is exposed to laser energy, it desorbs from the laser-transparent support. The source of laser energy is positioned in relation to the target substrate so that laser energy is directed through the laser-facing surface of the target substrate and through the laser-transparent support to strike the composite material at a defined target location. The receiving substrate is positioned in a spaced relation to the target substrate. The source of laser energy has sufficient energy to desorb the composite material at the defined target location, causing the composite material to desorb from the defined target location and be lifted from the support surface of the laser-transparent support. The composite material is deposited at a defined receiving location on the receiving substrate. The steps are repeated at successive defined target locations and successive defined receiving locations such that the composite material is deposited in a microarray of deposited composite material. The method is useful for creating, for example, a gene recognition array,